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10/563,772	01/04/2006	Majeed D. Salman	120083-146503	3231
60172 7590 07/29/2010 SCHWABE, WILLIAMSON & WYATT, P.C. 1420 FIFTH, SUITE 3400 SEATTLE, WA 98101-4010				
EXAMINER WILLIS, RANDAL L				
ART UNIT		PAPER NUMBER		
2629				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/563,772

**Applicant(s)**

SALMAN ET AL.

**Examiner**

RANDAL WILLIS

**Art Unit**

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/CD)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is in response to application 10/563772 filed January 4<sup>th</sup> 2006.

Claims 1-22 are currently pending and have been examined.

### ***Response to Arguments***

2. Applicant's arguments filed 6/01/2010 have been fully considered but they are moot in view of new grounds of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-6, 9-13 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matusis (2003/0048260).

Apropos claim 1, Matusis teaches:

An apparatus comprising:

a body (1410 Fig. 14));

a keyboard upon said body (Buttons 1-9 in Fig. 14) including at least one key having at least two different functions (Functions 3, D, E, F Fig. 14) a first function if the key is activated with a terminating hand member of a user's right hand and a second function if the key is activated with a terminating hand member of a user's left hand ([0041] Matusis teaches each finger tip can be mapped to a function with a total possible of 10, meaning his detection circuit can determine if it's the left hand index finger or the right hand index finger and have a different function accordingly); and

a detection mechanism configured to detect one or more movements of at least a portion of a least one of the user's two hands toward the key to indicate, prior to an activation of the key by one of the terminating members ([0068] and [0045]), which one of said first function and said second function is to be associated with the activation, wherein the detection mechanism is configured to indicate that the first function when movement of a terminating member of the right hand toward the key is detected and the detection mechanism indicating the second function when movement of a terminating member of the left hand toward the key is detected, ([0041], [0052]), said detection mechanism being equipped to monitor movement of at least a portion of at least one of

the user's two hands (Finger to Function mapping shown in Fig. 14, [0043]) toward the key ([0068]).

However, Matusis doesn't explicitly teach that the first function is associated with the activation when a right-to-left movement of a terminating member of the right hand is detected and that the second function is to be associated with the activation when a left- to-right movement of a terminating member of the left hand toward the key is detected.

However, examiner takes official notice that using movement of an object to assist in identifying the object is well known in the field of optical recognition. Further, Matusis already teaches both associating different movement with different functions [0045] as well as teaching capturing continuous frame prior to activation to detect movement towards the input sensor [0068].

Therefore one of ordinary skill in the art at the time of the invention would have found it obvious that using the direction from which the fingertip approaches the input sensor could be used to aid in identifying which hand and therefore which function should be associated with the input to achieve the predictable result of allowing a single input sensor to be associated with multiple functions.

Apropos claim 2, Matusis teaches:

The apparatus of claim 1 wherein said detection mechanism comprises a camera ( Imaging system [0043]).

Apropos claim 3, Matusis teaches:

The apparatus of claim 2 further comprising a logic configured to temporally analyze a plurality of images from said camera, wherein said images including positions information of the user's terminating hand that allows determination of right to left or left to right movements([0043]).

Apropos claim 4, Matusis teaches:

The apparatus of claim 2 wherein said camera is integrated with said body (1430 Fig. 14).

Apropos claim 5, Matusis teaches:

The apparatus of claim 1 wherein said detection mechanism includes at least one terminating hand member sensor (Identifies individual fingers of the hand [0043]).

Apropos claim 6, Matusis teaches:

The apparatus of claim 5 wherein said terminating hand member sensor is configured to detect when another terminating hand member is in a non- use position ([0068]).

Apropos claim 9, Matusis teaches:

The apparatus of claim 1 wherein said detection mechanism comprises at least one motion detector ([0045]) to monitor movement of at least a portion of at least one of the user's two hands toward the key ([0068]).

Apropos claim 10 Matusis teaches:

The apparatus of claim 9 wherein said motion detector is to detect right to left or left to right motions associated with a key activation ([0045]).

Apropos claim 11, Matusis teaches:

The apparatus of claim 1 wherein the apparatus is a selected one of a wireless mobile phone and a personal digital assistant (Phone in Fig. 14).

Apropos claim 12, Matusis teaches:

An apparatus comprising:

a body (1410 Fig. 14);

a keyboard upon said body (Buttons 1-9 in Fig. 14) including a key having two different functions associated with the key (Functions 3, D, E, F Fig. 14) a first function if the key is activated with a terminating hand member of the right hand and a second function if the key is activated with a terminating hand member of the left hand ([0041] Matusis teaches each finger tip can be mapped to a function with a total possible of 10,

meaning his detection circuit can determine if it's the left hand index finger or the right hand index finger and have a different function accordingly); and

a camera to monitor movement of a user's terminating hand members with respect to said keyboard (1430, Fig. 14), said monitoring of movement to facilitate provision, prior to activation of the key ([0068]), an indicia of which of the first or the second function being associated with key, depending on whether a user's terminating hand member that will be used to activate the key is determined to be located on the user's left hand or right hand (1430 indicates to the device which finger touched the corresponding button as seen in the table on Fig. 14, further fingers of either the left or right hand can be detected [0052]).

However, Matusis doesn't explicitly teach that the first function is associated with the activation when a right-to-left movement of a terminating member of the right hand is detected and that the second function is to be associated with the activation when a left- to-right movement of a terminating member of the left hand toward the key is detected.

However, examiner takes official notice that using movement of an object to assist in identifying the object is well known in the field of optical recognition. Further, Matusis already teaches both associating different movement with different functions [0045] as well as teaching capturing continuous frame prior to activation to detect movement towards the input sensor [0068].

Therefore one of ordinary skill in the art at the time of the invention would have found it obvious that using the direction from which the fingertip approaches the input



sensor could be used to aid in identifying which hand and therefore which function should be associated with the input to achieve the predictable result of allowing a single input sensor to be associated with multiple functions.

Apropos claim 13, Matusis teaches:

The apparatus of claim 12 further comprising a processor configured temporally analyzing a plurality of images from said camera, said images including positions of said user's terminating hand members that allows determination of right to left or left to right movements([0043].

Apropos claim 19, Matusis teaches:

In an electronic device comprising a keyboard and having a plurality of input keys, including at least a first key having associated with it at least two character values, a first character value if the first key is activated by a terminating hand member of a user's right hand and a second different character value if the first key is activated by a terminating hand member of a user's left hand ([0041], [0052] Matusis detects which finger on which hand, so the index finger of the right hand can have a different function than the index finger of the left hand) a method comprising:

Determining, prior to an activation of the first key ([0068], whether a terminating hand member of the user moving toward the key is located on the user's right hand or left hand ([0043], [0052]); and

assigning one of said first or second character value to of said first key, based at least in part upon said determination (See table in Fig. 14), the assigned character to be inputted upon activation of the first key within a period of time from the determination (period of time between the frames of images and the contact of the sensor [0069]).

However, Matusis doesn't explicitly teach that the first function is associated with the activation when a right-to-left movement of a terminating member of the right hand is detected and that the second function is to be associated with the activation when a left- to-right movement of a terminating member of the left hand toward the key is detected.

However, examiner takes official notice that using movement of an object to assist in identifying the object is well known in the field of optical recognition. Further, Matusis already teaches both associating different movement with different functions [0045] as well as teaching capturing continuous frame prior to activation to detect movement towards the input sensor [0068].

Therefore one of ordinary skill in the art at the time of the invention would have found it obvious that using the direction from which the fingertip approaches the input sensor could be used to aid in identifying which hand and therefore which function should be associated with the input to achieve the predictable result of allowing a single input sensor to be associated with multiple functions.

Apropos claim 20, Matusis teaches:

The method of claim 19 further comprising:

And assigning the other of the first or second character value to said first key after said determining that the period of time has elapsed ([0045] where after determining which fingers are pressing, motion can be discerned to change the function)

Assigning the other of the first or second character value to the activation of the key if no activation occurs within the pre-defined period of time since said determining ([0055]).

Apropos claim 21, Matusis teaches:

The method of claim 19 wherein said determining comprises monitoring movement of at least a portion of at least one of a user's two hands ([0045]).

Apropos claim 22, Matusis teaches:

The method of claim 19 wherein said determining comprises temporally analyzing a plurality of images, said images including positions of said user's terminating hand members ([0043] and [0045]).

5. Claims 7, 8 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matusis in view of Wong (6,888,532).

Apropos claim 7, Matusis fails to explicitly teach:

The apparatus of claim 1 wherein said detection mechanism comprises at least one pressure sensor.

In the same field of portable input devices, Wong teaches an input device in which pressure sensors (312, Fig. 3) are used to detect how the user is holding the device and thus determine whether the device is in a left-hand mode or right hand mode (COI 2 lines 35-40) and changes the functions of the input accordingly.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include pressure sensors as taught by Wong in the input device of Matusis in order to allow the device to detect the orientation of the display and change button functions accordingly.

Apropos claim 8, Matusis fails to explicitly teach:

The apparatus of claim 1 wherein said at least one pressure sensor comprises a sensor to detect pressure on a side of said body, said side corresponding to said determined terminating hand member.

In the same field of portable input devices, Wong teaches an input device in which pressure sensors (312, Fig. 3) are used to detect how the user is holding the device and thus determine whether the device is in a left-hand mode or right hand mode (COI 2 lines 35-40) and changes the functions of the input accordingly.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include pressure sensors as taught by Wong in the input device of

Matusis in order to allow the device to detect the orientation of the display and change button functions accordingly.

Apropos claim 14, Matusis teaches:

An apparatus comprising:

a body (810, Fig. 8);

a keyboard upon said body (822, Fig. 8) including a key having two different functions associated with the key (Functions 3, D, E, F Fig. 14) a first function if the key is activated with a terminating hand member of the right hand and a second function if the key is activated with a terminating hand member of the left hand ([0041] Matusis teaches each finger tip can be mapped to a function with a total possible of 10, meaning his detection circuit can determine if it's the left hand index finger or the right hand index finger and have a different function accordingly, the determination of terminating member can be made using images prior to the button press [0068]); and

However Matusis fails to explicitly teach:

at least one pressure sensor to monitor movement of a user's terminating hand members with respect to said keyboard, said monitoring of movement to provide an indicia of which of said user's terminating hand members is being used to activate the key with at least two different associated functions is located on the user's right hand or left hand.

In the same field of portable input devices, Wong teaches an input device in which pressure sensors (312, Fig. 3) are used to detect how the user is holding the

device and thus determine whether the device is in a left-hand mode or right hand mode (COI 2 lines 35-40) and changes the functions of the input accordingly.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include pressure sensors as taught by Wong in the input device of Matusis in order to allow the device to detect the orientation of the display and change button functions accordingly while aiding in the detection of which hand the user is using.

However, Matusis doesn't explicitly teach that the first function is associated with the activation when a right-to-left movement of a terminating member of the right hand is detected and that the second function is to be associated with the activation when a left- to-right movement of a terminating member of the left hand toward the key is detected.

However, examiner takes official notice that using movement of an object to assist in identifying the object is well known in the field of optical recognition. Further, Matusis already teaches both associating different movement with different functions [0045] as well as teaching capturing continuous frame prior to activation to detect movement towards the input sensor [0068].

Therefore one of ordinary skill in the art at the time of the invention would have found it obvious that using the direction from which the fingertip approaches the input sensor could be used to aid in identifying which hand and therefore which function should be associated with the input to achieve the predictable result of allowing a single input sensor to be associated with multiple functions.

Apropos claim 15, Wong further teaches:

The apparatus of claim 14 wherein said at least one pressure sensor comprises a sensor to detect pressure on a side of said body (312, Fig. 3).

Apropos claim 16, Wong further teaches:

The apparatus of claim 15 wherein said side corresponds to said determined terminating hand member (Col. 6 lines 5-30)

6. Claims 17-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Matusis in view of Harrison (6,538,636).

Apropos claim 17, Matusis teaches:

An apparatus comprising:

a body (810, Fig. 8)

a keyboard upon said body (822, Fig. 8) including at least one key having at least two different functions associated with the key (Functions 3, D, E, F Fig. 14) a first function if the key is activated with a terminating hand member of the right hand and a second function if the key is activated with a terminating hand member of the left hand ([0041] Matusis teaches each finger tip can be mapped to a function with a total possible of 10, meaning his detection circuit can determine if it's the left hand index

finger or the right hand index finger and have a different function accordingly and using frames prior to the key activation to detect which terminating member is pressing the switch, [0068]); and

However, Matusis fails to explicitly teach:

a motion sensor to monitor movement of said body, said monitoring of movement to provide an indicia of whether a user's terminating hand members used to activate a key of said keyboard is located on the user's right hand or left hand..

In the same field of portable input devices, Harrison teaches having motion detectors (3a,b Fig. 1) which can detect the orientation of the portable devices, and change the function of the input keys according to the orientation (See Figures 2 and 3).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use motion sensors as taught by Harrison in the portable device of Matusis in order to allow the device to change functionality depending upon it's orientation.

However, Matusis doesn't explicitly teach that the first function is associated with the activation when a right-to-left movement of a terminating member of the right hand is detected and that the second function is to be associated with the activation when a left- to-right movement of a terminating member of the left hand toward the key is detected.

However, examiner takes official notice that using movement of an object to assist in identifying the object is well known in the field of optical recognition. Further, Matusis already teaches both associating different movement with different functions



[0045] as well as teaching capturing continuous frame prior to activation to detect movement towards the input sensor [0068].

Therefore one of ordinary skill in the art at the time of the invention would have found it obvious that using the direction from which the fingertip approaches the input sensor could be used to aid in identifying which hand and therefore which function should be associated with the input to achieve the predictable result of allowing a single input sensor to be associated with multiple functions.

Apropos claim 18, Matusis fails to explicitly teach:

The apparatus of claim 17 wherein said motion sensor is a MicroElectroMechanical Systems (MEMS) device.

However, examiner takes official notice that MEMS motion sensors are common in the art and therefor would have been an obvious choice for the motion sensors taught by Harrison in the combination above to one of ordinary skill in the art at the time of the invention.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RANDAL WILLIS whose telephone number is (571)270-1461. The examiner can normally be reached on Monday to Thursday, 8am to 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RLW/

/Amare Mengistu/  
Supervisory Patent Examiner, Art Unit 2629